

Trimester 1 Review

Topics:

1. Atoms, Molecules, Elements, Compounds (AMEC)
2. Characteristics of Life (all 6!)
3. Plant vs. Animal Cells
4. Photosynthesis & Respiration

Directions: Write a definition (short or long) for each.

Atom =

Molecule =

Element =

Compound =

Science Definitions:

Atom = A basic unit of matter.

Molecule = A group of two or more atoms.
(Note: can be same OR different types!)

Element = One or more atoms of the *same type*.

Compound = A group of two or more
different atoms.

Definitions: Mr. Hill's favorites shorts!

Atom = ONE (Alone)

Molecule = MANY (More than one)

Element = PURE

Compound = DIFFERENT (Impure)

Directions: Draw 2-3 in each box
(don't worry if they could be in more than one box)

Atom

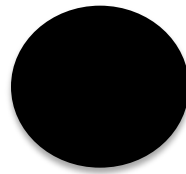
Element

Molecule

Compound

Draw one that is both an
ATOM and an ELEMENT

Draw one that is both an
ATOM and an ELEMENT

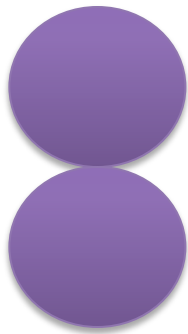


ATOM = One (Alone)

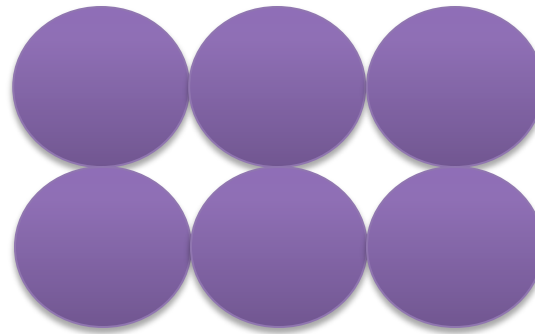
ELEMENT = Pure

Draw one that is both an
ELEMENT and a MOLECULE

Draw one that is both an
ELEMENT and a MOLECULE



OR

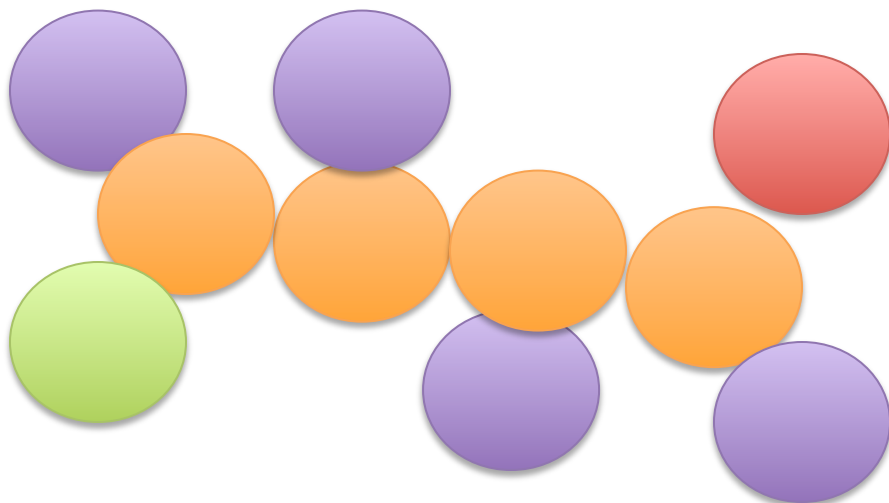


ELEMENT = Pure

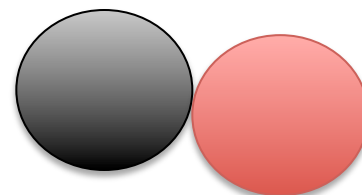
MOLECULE = Many (More than 1)

Draw one that is both a
MOLECULE and a COMPOUND

Draw one that is both a
MOLECULE and a COMPOUND



OR



MOLECULE = Many (More than 1)

COMPOUND = Different (Impure)

Draw one that is both an
ATOM and a MOLECULE

Draw one that is both an
ATOM and a MOLECULE

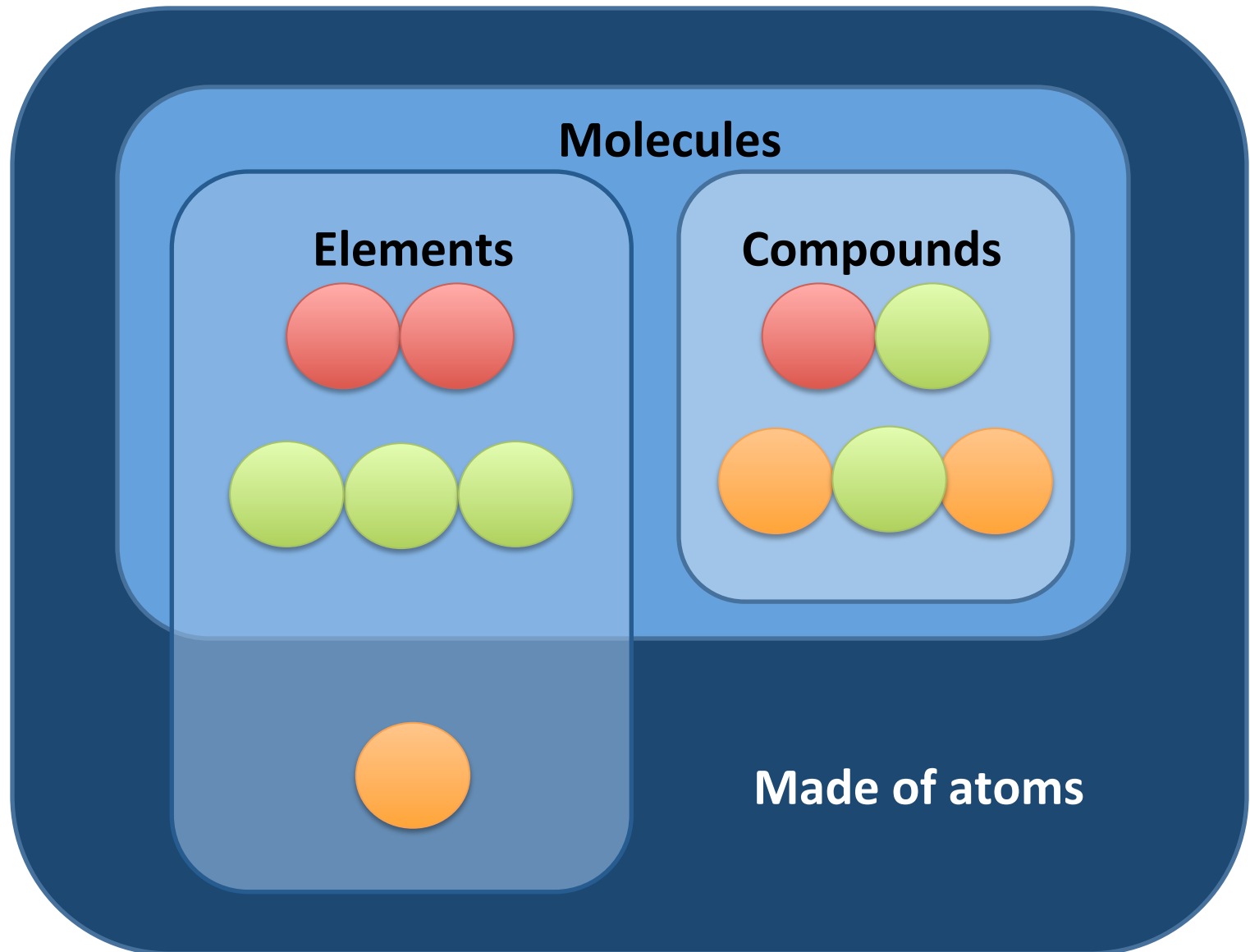
THAT'S IMPOSSIBLE!!!!

(TRICK QUESTION! 😊)

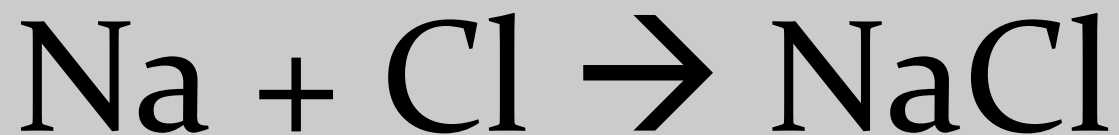
ATOM = One (Alone)

MOLECULE = Many (More than 1)

Examples (Graphic Organizer)



Chemical Reactions (Quick Check)



Use the chemical equation above to:

1. CIRCLE the reactant(s)
2. Put a BOX around the product(s)
3. Write one word or phrase for the
ARROW: _____

Reactants → **Products**



REACTANTS:

The things
going into
the reaction.

PRODUCT(S): The
thing(s) coming
out.

The Arrow

Can you think of some words that we can use to talk about the arrow.

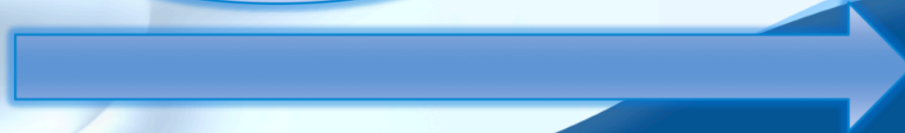
“Na plus Cl becomes NaCl.”

turns into

creates

~~equals~~ (Wrong!)

Na + Cl

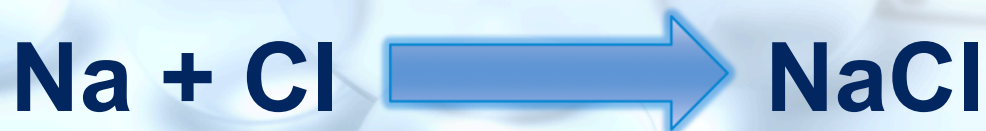


NaCl

The Arrow

The arrow does NOT mean “equals.”

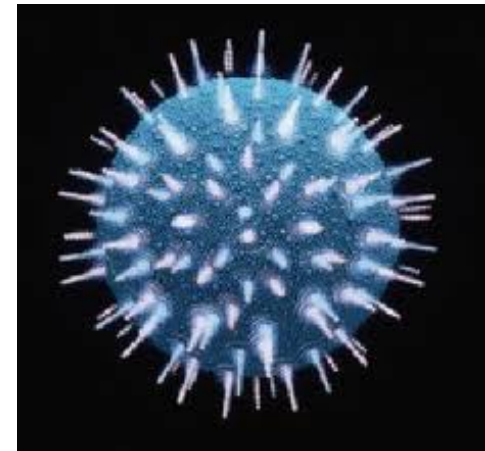
Remember, *new* things are made, which are *different* than the things we started with.



Characteristics of Life



- All living things must have **ALL SIX** of the characteristics that we will learn.
- If even one is missing it **CANNOT** be considered alive!



CHARACTERISTICS OF LIFE

(requirements for something to be considered living)

1.

2.

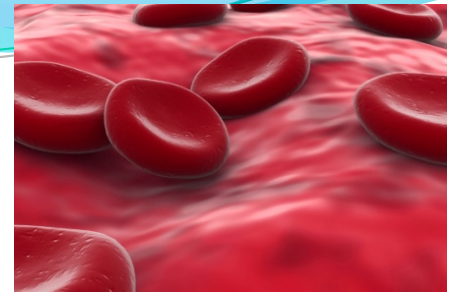
3.

4.

5.

6.

MADE OF CELLS



1. All living things are made of one or more CELLS.

Cells are the smallest unit that can carry on all of the activities of life.

Some organisms are single-celled and others contain trillions of cells. (*We will learn even more about very soon!*)

RESPOND



2. All living things sense and respond to change.

A change that affects how an organism acts is called a *stimulus*.

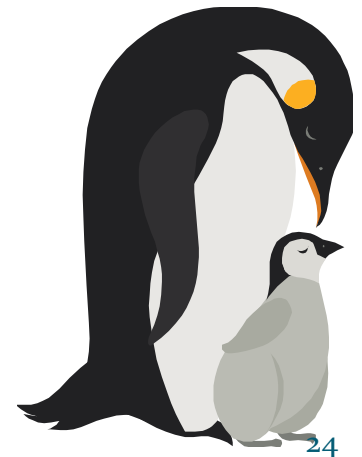
Stimuli (plural for stimulus) can be things like touch, light, sounds, or hunger – anything that causes a response.

OFFSPRING

3. All living things reproduce.

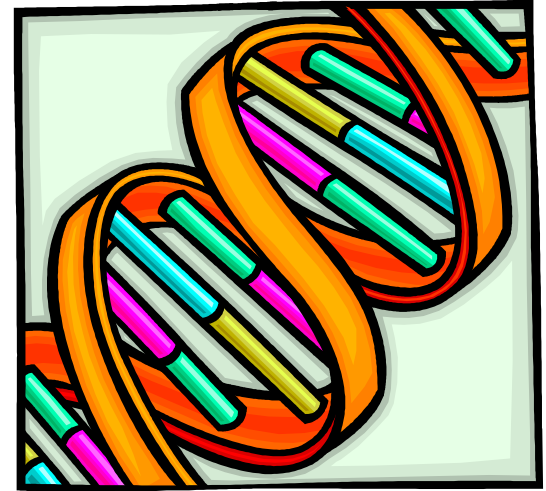
Every type of organism has *offspring* (Yes, that's right, even plants have “babies”).

Without offspring the species would become extinct.



DNA

4. All living things contain DNA.



DNA stands for Deoxyribonucleic acid.

DNA is found inside every cell!

DNA carries instructions for the organism's traits.

(We will learn much more about this during our genetics unit!)

USE ENERGY



5. All living things need and use energy

Energy is the “gas” for life.

Every cell needs energy to continue living.

Most organisms get their energy from food.

Question: Where do plants get their energy?

GROW

6. All living things grow and change



All organisms grow at some point in their life.

- Sometimes they simply get larger.
- Other times they change (for example, a tadpole turns into a frog).

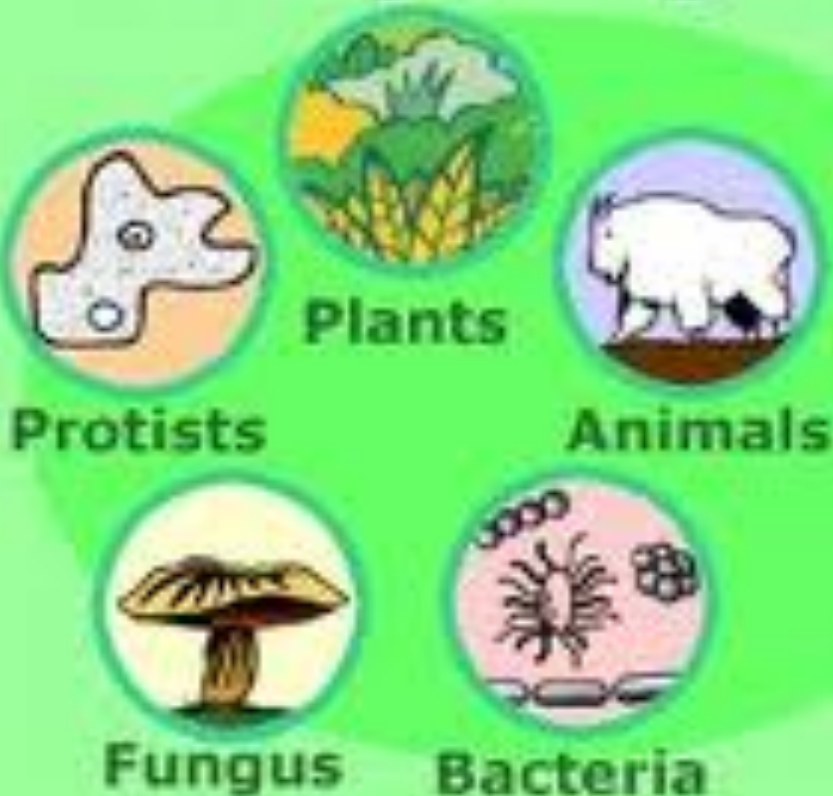
CHARACTERISTICS OF LIFE

(requirements for something to be considered living)

1. Made of Cells
2. Sense and Respond to Change
3. Reproduce
4. Contain DNA
5. Need and Use Energy
6. Grow and Change

Living vs. Non-Living Examples

Living Things



Non Living Things



Plant Cells or Animal Cells?

Put a “P” by Plant Cell descriptions

Put an “A” by Animal Cell descriptions

1. ____ No Pattern

2. ____ Random

3. ____ Organized

4. ____ Recognizable Shape

5. ____ Blob Shape

6. ____ Neat

7. ____ Stacked

8. ____ Messy

9. ____ Odd Shape

10. ____ Rows & Columns

Answers

“P” = Plant Cells

“A” = Animal Cells

1. __A__ No Pattern

2. __A__ Random

3. __P__ Organized

4. __P__ Recognizable Shape

5. __A__ Blob Shape

6. __P__ Neat

7. __P__ Stacked

8. __A__ Messy

9. __A__ Odd Shape

10. __P__ Rows & Columns

**What THREE cell parts that can be found ONLY in plant cells?
What do they do (what is their job)?**

Cell Part	Function/Job
1.	
2.	
3.	

Plant Cells

Cell Part	Function/Job
1. Cell Wall	Provides support for the cell
2. Large Central Vacuole (LCV)	Stores water for the cell
3. Chloroplast	Site of photosynthesis (where sunlight is made into food!). (These also make plants are GREEN .)

Complete the Chart

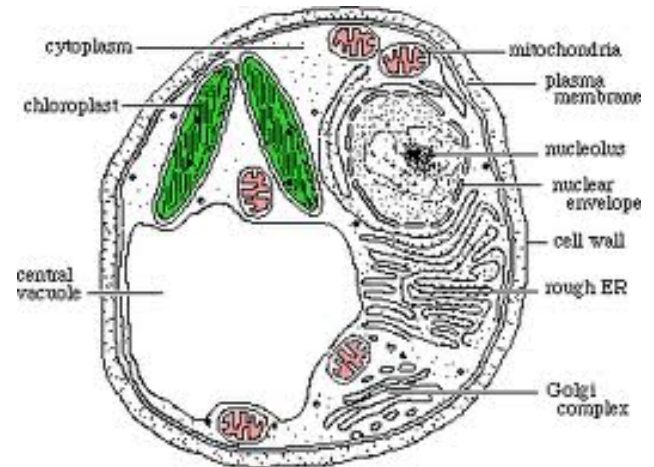
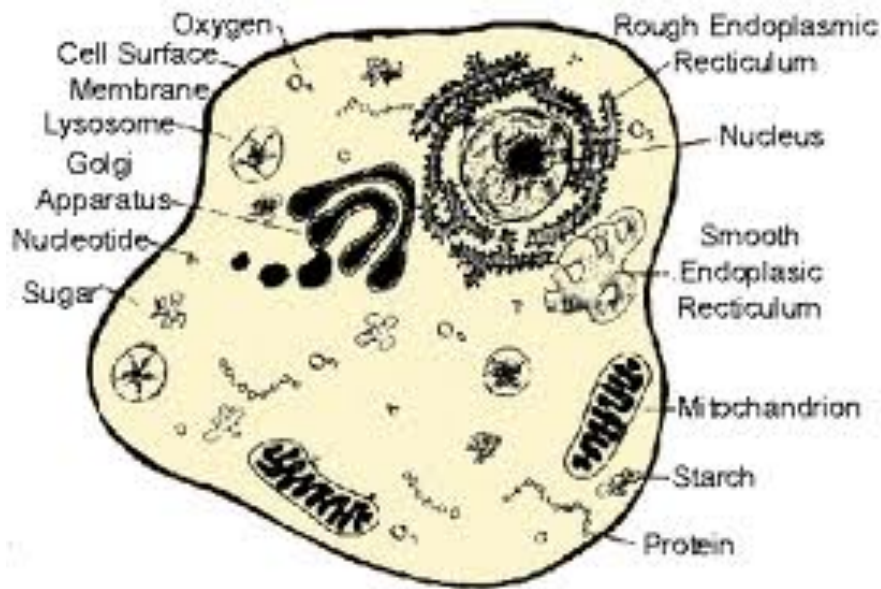
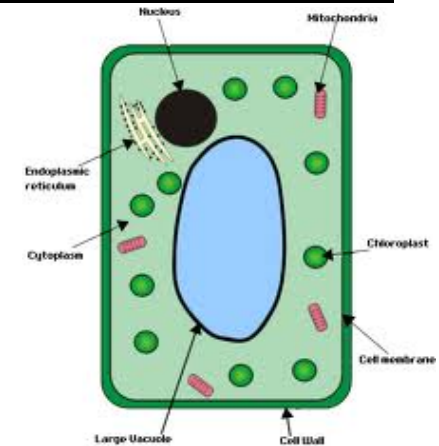
	Cell <u>Wall</u>	Cell <u>Membrane</u>
Cell Type/ Location (plant, animal, both)		
Structure (what it's like)		
Function (what it does)		

Answers

	Cell Wall	Cell Membrane
Cell Type/ Location (plant, animal, both)	Plant	Both (plant & animal)
Structure (what it's like)	Stiff Strong Thick	Flexible Squishy Thin
Function (what it does)	Gives Support	Holds Stuff In

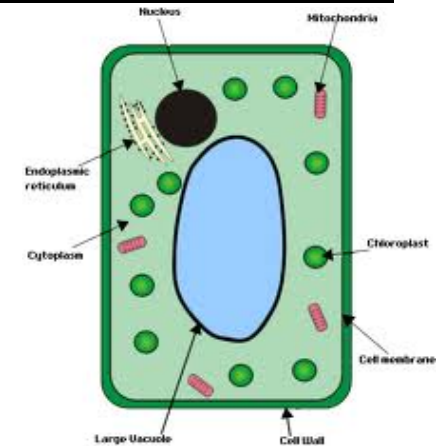
Plant or Animal Cells?

➤ **How do you know?**
(What is there?)
(What is not there?)

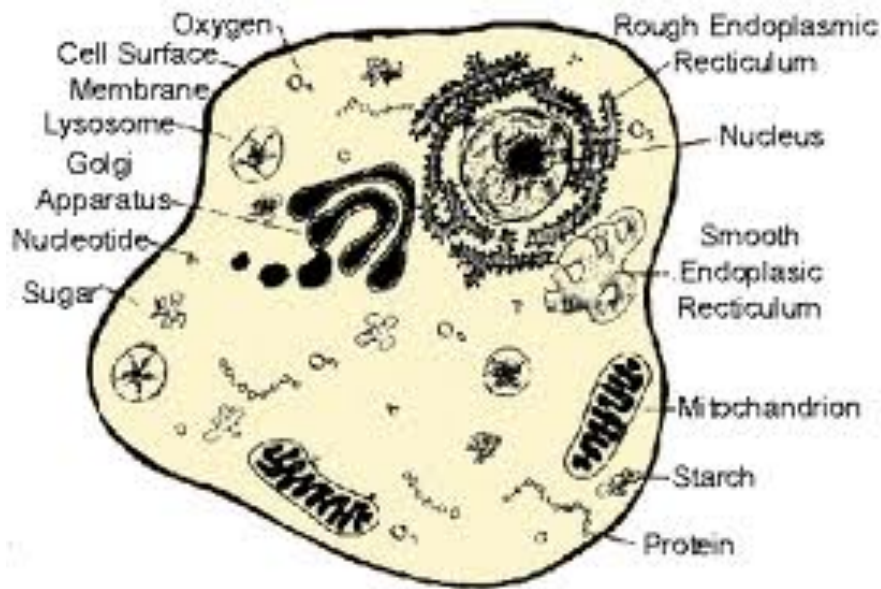


Plant or Animal Cells?

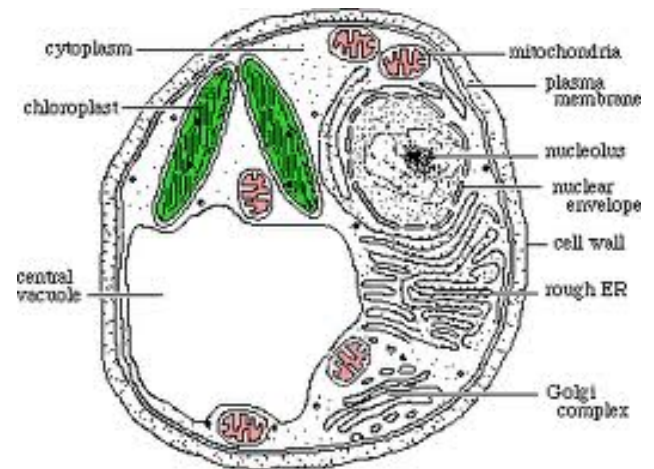
➤ **How do you know?**
(What is there?)
(What is not there?)



Plant (Cell Wall, LCV,
Chloroplast)



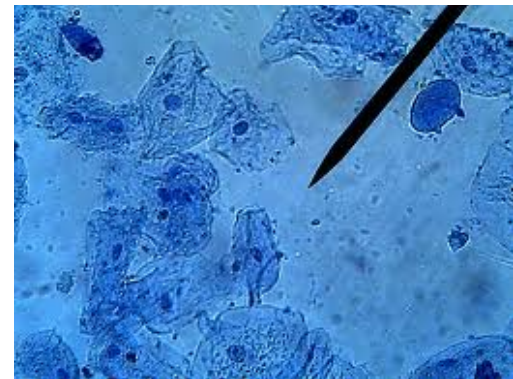
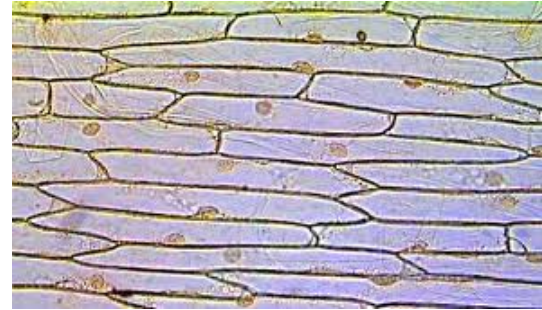
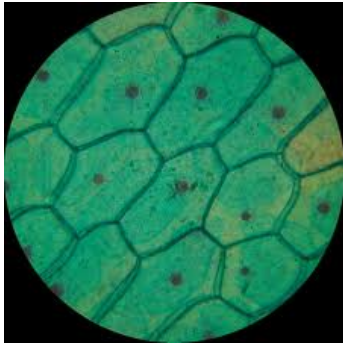
Animal (Shape, NO Cell
Wall, LCV, or Chloroplast)



Plant (Cell Wall, LCV,
Chloroplast)

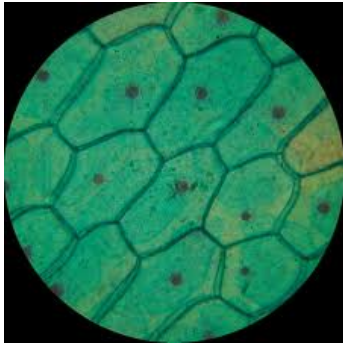
Plant Cells or Animal Cells

How do you know?

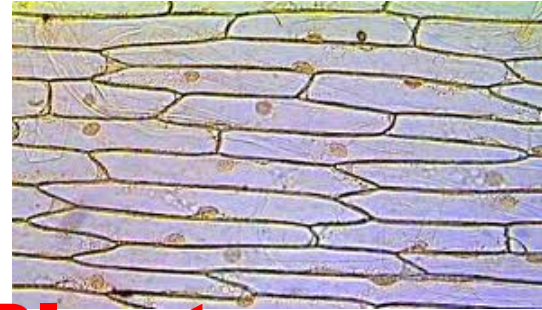


Plant Cells or Animal Cells

How do you know?



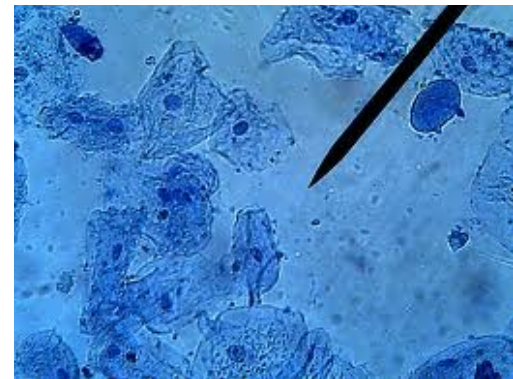
**Plant (Cell Wall,
Regular Shape, Grid)**



**Plant (Cell Wall,
Regular Shape, Grid)**



**Plant (Chloroplasts,
Regular Shape, Grid)**



**Animal (Blobby,
Clumps and alone)**

Cell Division

- Give two reasons that cells need to divide.
 - 1.
 - 2.
- Are the cells formed identical or different? (circle one)

Cell Division

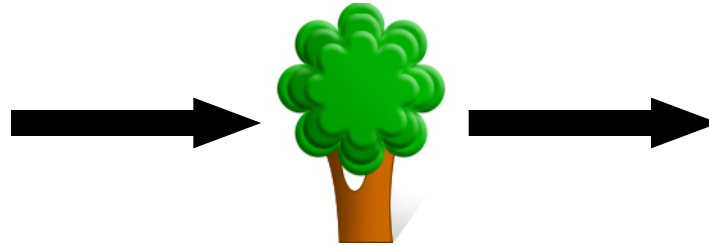
- Give two reasons that cells need to divide.
 1. **GROWTH** (so the organism can get bigger)
 2. **REPAIR** (to fix damaged cells)
- Are the cells formed identical or different? (circle one)

P-R “Quick Check”

GOES IN

Photosynthesis

COMES OUT

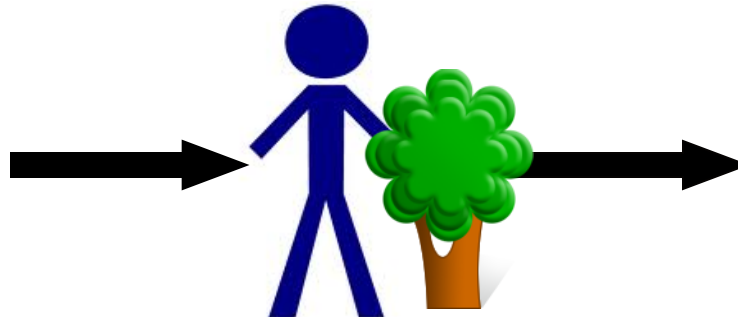


Cell Part:

GOES IN

Respiration

COMES OUT



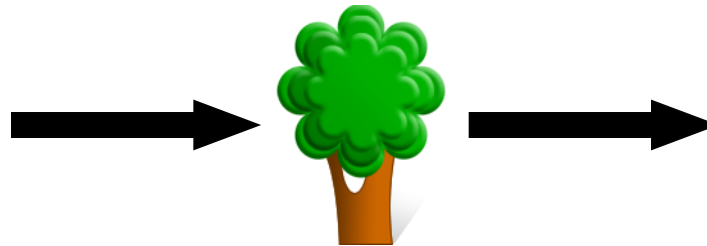
Cell Part:

P-R “Quick Check”

GOES IN

Sunlight
Water
Carbon Dioxide

Photosynthesis



COMES OUT

Food (Glucose/Sugar)
Oxygen

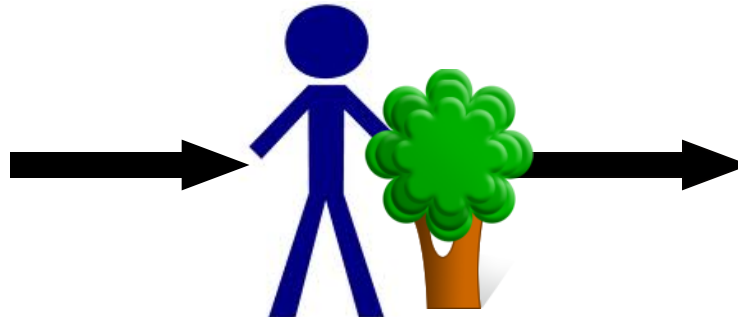
Bonus 1

Cell Part: Chloroplast

GOES IN

Food (Glucose/Sugar)
Oxygen

Respiration



COMES OUT

Energy (ATP)
Water
Carbon Dioxide

Bonus 2

Cell Part: Mitochondria

Additional Study Questions

Photosynthesis

1. What is the main purpose (product) of photosynthesis?
2. What type(s) of cells do photosynthesis? (Plant, Animal, or Both?)
3. Where in the cell does photosynthesis happen? (What cell part?)

Additional Study Questions

Photosynthesis

1. What is the main purpose (product) of photosynthesis?

FOOD (SUGAR/GLUCOSE)

2. What type(s) of cells do photosynthesis? (Plant, Animal, or Both?)

PLANT CELLS (Only!)

3. Where in the cell does photosynthesis happen? (What cell part?)

CHLOROPLAST

Additional Study Questions

Respiration

4. What is the main purpose (product) of respiration?

5. What type(s) of cells do respiration? (Plant, Animal, or Both?)

6. Where in the cell does respiration take place? (What cell part?)

Additional Study Questions

Respiration

4. What is the main purpose (product) of respiration?

ENERGY (ATP)

5. What type(s) of cells do respiration? (Plant, Animal, or Both?)

BOTH (Plant and Animal Cells)

6. Where in the cell does respiration take place? (What cell part?)

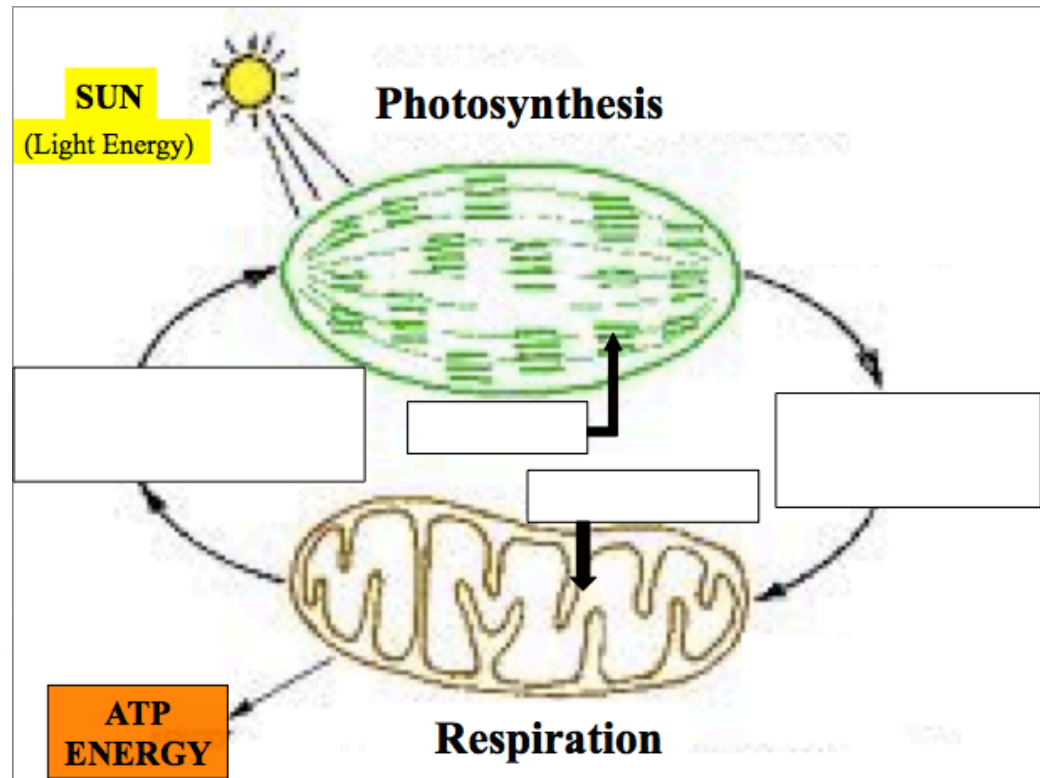
MITOCHONDRIA

Additional Study Questions

Photosynthesis & Respiration

7. What is the relationship between photosynthesis and respiration?
(Hint: Fill in the picture to help you see the relationship, **then describe it in words**)

Answer:



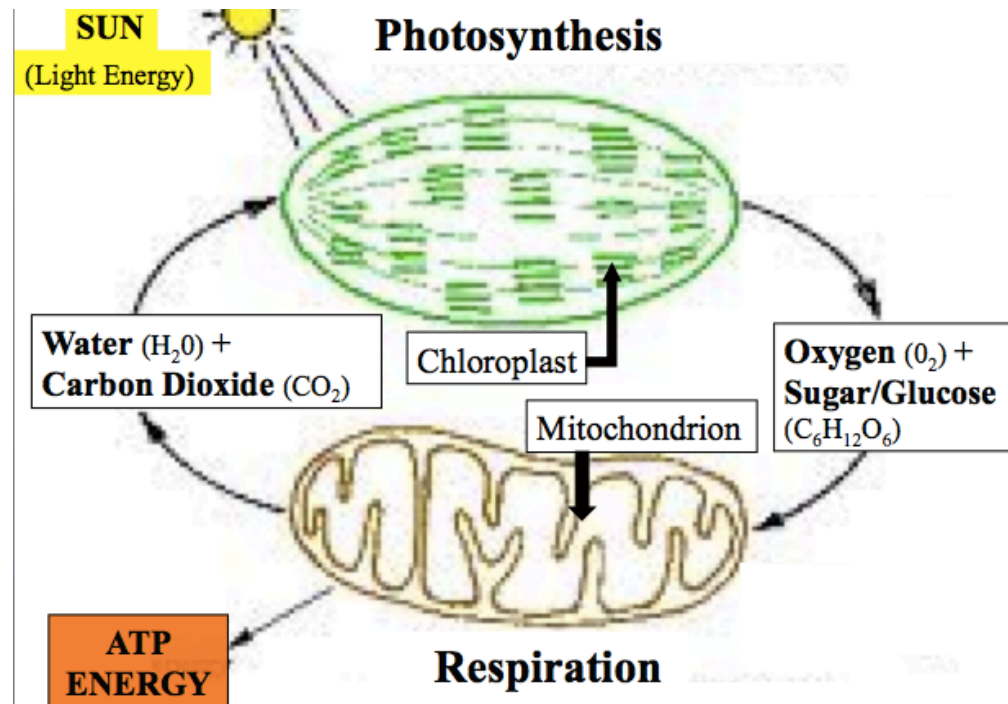
Additional Study Questions

Photosynthesis & Respiration

7. What is the relationship between photosynthesis and respiration?
(Hint: Fill in the picture to help you see the relationship, **then describe it in words**)

Answer: **The things that are made during photosynthesis (the products) are used for respiration (reactants), and two of the products of respiration are reactants for photosynthesis.**

They recycle each other!

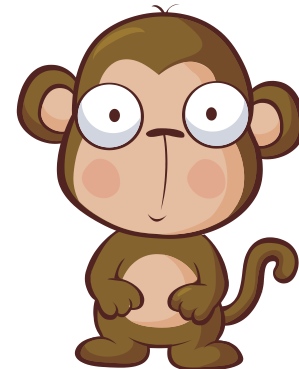




Vocabulary

Organism: a _____

Organism is simply a science word we use to describe a _____. An organism could be a plant, animal or bacteria - ANYTHING that is _____!

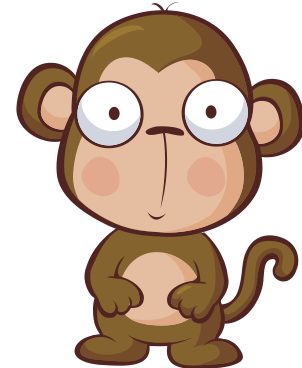




Vocabulary

Organism: a living thing

Organism is simply a science word we use to describe a living thing. An organism could be a plant, animal or bacteria - ANYTHING that is alive!



Place the magnets in the correct place.

Atom

Element

Molecule

Compound